

# SCOPE

MAGAZINE OF NAVAL MEDICINE

DEVELOPMENT

FALL 2023



## LT ANCA SELARIU

*NAMRU INDO PACIFIC MICROBIOLOGIST*

JOINS NASA EFFORTS TO PREPARE FOR

# MARS

SURFACE MISSIONS

# SCOPE

MAGAZINE OF NAVAL MEDICAL RESEARCH AND DEVELOPMENT

ISSUE 4 FALL 2023

## Editor's Desk

Welcome back to THE SCOPE.

It has been a busy and successful summer across the NMR&D enterprise. This issue highlights a few notable events, only cracking the surface of our activities. This summer, half of the enterprise held change of command ceremonies, we attended (and killed it at) the 2023 Military Health System Research Symposium. We also rolled out new branding guidelines and logos for all 8 commands.

I would also like to thank Burrell Parmer, who is departing NAMRU San Antonio, for his contributions to the enterprise. You have been an amazing person to work with, and I wish you all the luck in the world at your new assignment.

Special thanks also our OCONUS NAMRU contributors to this issue. We are excited to showcase your accomplishments!

Happy birthday, Navy!

—Tommy Lamkin

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Kahoma Villaizan

## NAMRU SOUTH Hosts Students for Military Tropical Medicine Field Exercise in Peru

By Sidney Hinds with  
Lt. Cmdr. Danielle Pannebaker  
& Dr. Juan Francisco Sanchez

**T**his past Summer, U.S. Naval Medical Research Unit (NAMRU) SOUTH welcomed nine U.S. military students to a field exercise in Peru as part of the Military Tropical Medicine (MTM) course.

This year's exercise was part of an MTM course coordinated by the Uniformed Services University and NAMRU SOUTH, and was the first held in Peru since 2019. Students, having just completed a four-week classroom curriculum held in Bethesda, Maryland, took part in a variety of tours and field activities to expand their knowledge of tropical medicine and epidemiology surveillance of tropical diseases.

Lt. Cmdr. Danielle Pannebaker, NAMRU SOUTH's director for the Peru MTM Training Program, Dr. Juan Francisco Sanchez, clinical rotation assistant and NAMRU SOUTH Parasitology Department public health scientist and Cmdr. Catherine Berjohn from Naval Medical Center San Diego, welcomed participants upon their arrival to Lima.

***“One of the main objectives of this MTM course is to strengthen relationships between the U.S. Armed Forces, Peruvian Navy and Peruvian Army”***

“One of the main objectives of this MTM course is to strengthen relationships between the U.S. Armed Forces, Peruvian Navy and Peruvian Army,” said Sanchez. “This goal was achieved with great success.”

The Peru MTM team, along with two translators, Kahoma Villaizan and Toané Zuloeta, toured several hospitals, universities, laboratories and communities in Lima, Iquitos and Tumbes.

“The visits to the Peruvian Armed Forces hospitals allowed students to learn how military personnel can contract tropical diseases from the areas where they are deployed,” Sanchez explained. “Students received instruction on the relevance of the epidemiology knowledge of the area where they are deployed, and how to prevent those diseases.”

*Continued on next page*

During their stay in Lima, students toured the newly renovated laboratory facilities at NAMRU SOUTH and were briefed on current and future projects in the Bacteriology, Parasitology, Virology, Entomology and Clinical Trials Unit departments, which conduct surveillance, epidemiology and basic science throughout Central and South America. Recent NAMRU SOUTH projects include assisting the Peruvian Ministry of Health in identifying the H5N1 Avian Influenza strain within local bird species, providing expert instruction in entomology and parasitology at the Defense Institute for Medical Operations course and curating surveillance data of malaria outbreaks in several regions of Peru.

The Peru MTM team also engaged with local hospitals, including Centro Medico Naval, Hospital Militar Central, the Universidad Peruana Cayetano Heredia (UPCH), Institute of Tropical Medicine Alexander von Humboldt and the Instituto Nacional de Ciencias Neurológicas hospitals. Local subject matter experts educated MTM students on the challenges of diagnosis, management and treatment for endemic tropical disease cases such as malaria, leishmaniasis, tropical spastic paraparesis and neurocysticercosis cases, which affect both military and civilian populations.

“We reinforced lessons learned in the didactics course with hands-on clinical cases of Leishmaniasis, malaria, cysticercosis, active tuberculosis, newly diagnosed HIV, and HTLV-1,” explained Lt. Clayton Fuqua, a family medicine resident physician from Navy Medicine Readiness and Training Command Camp Pendleton, and one of the U.S. military students attending the course.

Before departing Lima, the team visited the National Health Institute and Serpentarium, where Dr. Gualberto Marcas Caceres, the Institute’s coordinator of venomous animals, explained distinguishing attributes of local venomous snakes, spiders and scorpions.

In Iquitos, Peru, the MTM team toured the NAMRU SOUTH facility and its insectary, the first laboratory to successfully rear the *Anopheles darlingi* mosquito and to use mosquitos to monitor and test insecticide resistance. Additionally, the Peru MTM team spoke with physicians from Hospital Regional de Loreto and Hospital de Apoyo de Iquitos about the nuanced challenges of managing endemic diseases in a city of approximately 490,000 people accessible only by aerial and maritime routes.

The team then charted a boat down the Nanay River to the local Minis-

try of Health facility in the outskirts of Iquitos, in the community of Padrecocha. Here, MTM students participated in local field environmental sampling as part of a University of Virginia project to monitor prevalence and effects of infectious diarrheal disease in children.

For the last leg of their trip, the Peru MTM team visited the coastal region of Tumbes, an area recently affected by high rates of Dengue. Here, the team completed a rigorous fieldwork course led by UPCH. Carmen Flores, an entomologist with NAMRU SOUTH’s Entomology Department, taught students about larvae and mosquito identification, sampling and surveillance practices. Dr. Claudia Guezala, a research scientist with NAMRU SOUTH’s Virology and Emerging Infections Department, instructed the team on sentient rodent trapping and surveillance exercises.

Lastly, the MTM students learned about the UPCH Cysticercosis Elimination Program, which teaches the local community how to identify cysticercosis in pigs, the dangers of consuming infected pig meat and the eradication and treatment of pork tapeworm (*Taenia solium*), which causes cysticercosis infection in pigs. This knowledge is critical for preventing subsequent disease and complications, including neurocysticercosis, in humans.



“The Military Tropical Medicine program in Peru is a unique and valuable course for military providers in a variety of specialties, including infectious diseases, preventive medicine and family medicine,” remarked Pannebaker. “NAMRU SOUTH’s Peru MTM team is grateful for the support, efforts and experiences that local collaborators in Peru provided to the class of 2023 and look forward to many successful courses to come.”

■

Monica Barrera



## NHRC OPERATIONAL READINESS TEAM SUPPORTS US NAVAL SURFACE FORCES DURING EXERCISE TALISMAN SABRE

By John Marciano

**N**aval Health Research Center (NHRC)'s Operational Readiness (OR) team conducted a shipboard wearables demonstration onboard the USS Green Bay (LPD 20) as part of Exercise Talisman Sabre 2023 (TS23), from July 22 to August 4.

TS23 was a combined arms exercise conducted in Australia and was comprised of more than 30,000 service members from 13 nations. NHRC participated in this exercise as part of a multiservice wearables demonstration sponsored by the Joint Program Executive Office for Chemical, Biological, Radiological and Nuclear Defense.

NHRC's OR team went aboard Green Bay to collect data from the

ship's crew and embarked Marines, who wore the wearable devices to monitor their sleep quantity during the exercise.

This demonstration is part of NHRC's larger Command Readiness, Endurance and Watchstanding (CREW) program that was established in partnership with commander, Naval Surface Forces, to optimize human performance and fatigue management in the surface forces.

CREW team and partners from MIT Lincoln Laboratory and Naval Information Warfare Center Pacific are currently working to customize data flows and data processing from commercial off-the-shelf wearable devices for the secure and automatic transfer of sleep and other readi-

ness data to a new fatigue management system called Optimized Watchbill Logistics (OWL). The wearable data are collected as personnel pass by data hubs located in common shipboard spaces.

OWL is a program that streamlines operational planning workflows, the scheduling of ship activities and enables real-time monitoring to detect and mitigate operational fatigue risk.

Data from wearable devices can be used to identify individual Sailors at high risk of fatigue-related performance errors or accidents due to extreme sleep deficiencies, and predict fatigue risks across a department or watchstation for upcoming special evolutions.

*Continued on page 23*

# ANOTHER STRONG SHOWING: NMR&D ENTERPRISE WRAP UP THE 2023

# MHSRS



Tommy Lamkin

By Sidney Hinds

**P**ersonnel with the Naval Medical Research & Development (NMR&D) enterprise concluded the 2023 Military Health System Research Symposium (MHSRS) on August 17.

MHSRS, a four-day annual event which took place this year from August 14-17 at the Gaylord Palms Resort & Conference Center, provided enterprise personnel with multiple forums to demonstrate the breadth and impact of research done by all eight commands.

“Leadership in Navy and Military Medicine see that the work we do is relevant across the services,” said Capt. Franca Jones, commander,

NMRC. “We are doing work in two important and complimentary lines of effort: not only on behalf of the Navy and Marines, but the entirety of the DoD.”

*“Leadership in  
Navy and Military  
Medicine see that  
the work we do is  
relevant across  
the services”*

Over 130 enterprise personnel attended MHSRS to represent its eight commands: NMRC, Naval Submarine Medical Research Laboratory (NSMRL), Naval Health Research Center (NHRC), Naval Medical Research Unit (NAMRU) Dayton, NAMRU San Antonio, NAMRU INDO PACIFIC, NAMRU EURAFCENT and NAMRU SOUTH. Enterprise staff, a group of military, civilian and contractor research, medical and support personnel, participated in a range of conference activities, speaking at breakout sessions, presenting research posters and engaging with stakeholders throughout the military health system.

*Continued on next page*



“Our enterprise researchers gave an impressive showing at MHSRS again this year,” said Dr. Jill Phan, NMR&D enterprise and NMRC science director. “They are so dedicated to their work, and it clearly shows with dozens of posters and presentations in topic areas span-

ning a diverse set of critical research areas, chairing sessions and winning multiple awards.”

*“I’m blown away by the quality and breadth of research that our colleagues in military health bring to this symposium every year”*

“All the while, we’re meeting with collaborators, colleagues, funding sponsors and leadership to take full advantage of being together with our larger community working to-

gether to fill gaps and solve problems in military medicine,” Phan added.

During the opening award ceremony on Monday, NHRC received two awards: one for the work done by the Millennium Cohort team to research the long-term physical and behavioral health impacts of service, and another by the Command Readiness, Endurance, and Watchstanding (CREW) team for their work in studying sleep habits and fatigue solutions for sailors.

“Our research staff at NHRC are an outstanding group of professionals,” Capt. Eric Welsh, NHRC commanding officer, observed. “They are personally invested in the well-being and readiness of our warfighters, and their recognition here at MHSRS shows just that. I am proud to have charge of this great command.”

*Continued on next page*



Researchers from commands across the enterprise participated in three separate poster presentation sessions during the symposium. Additionally, NMRC and NSMRL earned second place and honorable mention awards out of the hundreds of posters displayed at each session.

“I’m blown away by the quality and breadth of research that our colleagues in military health bring to this symposium every year,” said Cmdr. Brian Pike, NMRC deputy science director. “The knowledge all of us take away from these presentations informs and strength-

ens our work on behalf of U.S. service members and our nation.”

MHSRS is the Department of Defense’s premier scientific meeting that focuses specifically on the unique medical needs of the warfighter. This annual educational symposium brings together healthcare professionals, researchers and DoD leaders for four days of critical learning, intensive idea sharing, and relationship building.

The NMR&D enterprise, led by NMRC, is engaged in a broad spectrum of activity from basic science

in the laboratory to field studies in austere and remote areas of the world to investigations in operational environments.

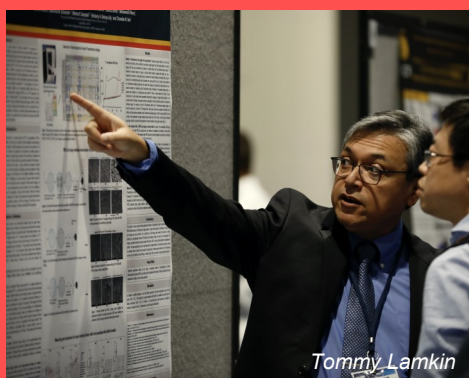
In support of the Navy, Marine Corps and joint U.S. warfighters, enterprise researchers study infectious diseases, biological warfare detection and defense, combat casualty care, environmental health concerns, aerospace and undersea medicine, medical modeling, simulation, operational mission support, epidemiology and behavioral sciences. ■



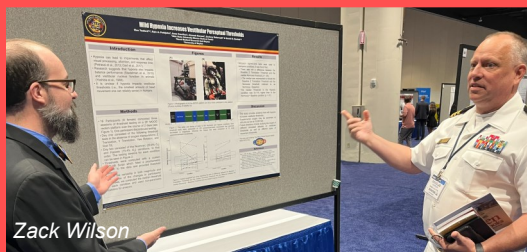
Tommy Lamkin



Sidney Hinds



Tommy Lamkin



Zack Wilson



Amanda Wagner



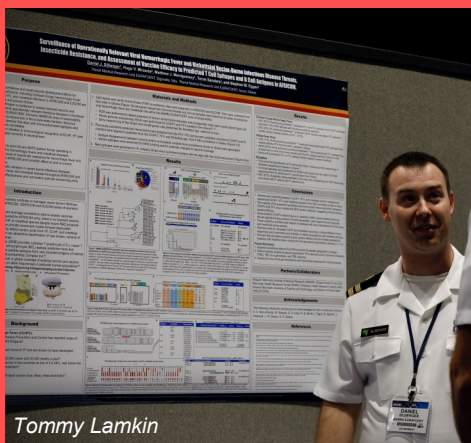
Emily Swedlund



Tommy Lamkin



Burrell Parmer



Tommy Lamkin



Sidney Hinds



Egypt Center for Research and Regenerative Medicine

## NAMRU EURAFCENT and Egyptian Army Ink Partnership

By Sidney Hinds

**N**aval Medical Research Unit (NAMRU) EURAFCENT signed a Memorandum of Understanding with the Egyptian Military's Egypt Center for Medical Research and Regenerative Medicine (ECRRM) during a ceremony in Cairo, Egypt on August 29.

The memorandum will facilitate ongoing joint research projects between the U.S. and Egyptian researchers in the areas of endemic and infectious diseases, with the aim of improving the health and safety of service members and the citizens of both nations.

Capt. Virginia Blackman, NAMRU EURAFCENT's commanding officer, joined Egyptian Army Maj. Gen. Khaled Amer, director, ECRRM, for the signing.

"Since the first written agreement establishing our command, the scientific and humanitarian successes generated here have been the result of collaboration," Blackman remarked. "Today, I am delighted to re-affirm our commitment to conduct research on concerns of mutual interest together."

Previous joint work between NAMRU EURAFCENT and ECRRM has included research on a range of potentially devastating diseases such as cholera, meningitis, malaria, schistosomiasis, Rift Valley fever, measles and mumps. This research has expanded in recent years to include Dengue and Chikungunya. NAMRU EURAFCENT staff undertake work in surveillance and research to characterize viruses, parasites and vectors that could carry or transmit them. These efforts aid responses to outbreaks of illness, and inform pro-

cesses and policies to prevent threats to Sailor health.

"The enduring partnership between NAMRU EURAFCENT and Egypt is a partnership of people," said Blackman. "Committed scientists, both American and Egyptian, working together to defeat infectious diseases that have plagued humanity for centuries."

NAMRU EURAFCENT was founded in 1946 in Cairo, under the name NAMRU-3. NAMRU EURAFCENT maintains multiple collaborative relationships from its Cairo site, in addition to ECRRM, to include Ain Shams University Hospital, Multinational Forces and Observers in Egypt and the ministries of health in Jordan, Tunisia and Cameroon. Command activities in the region include the monitoring of multiple diseases and illnesses of concern to public health and to the readiness of deployed U.S. forces. ■

# LT ANCA SELARIU

NAMRU INDO PACIFIC MICROBIOLOGIST

JOINS NASA EFFORTS TO PREPARE FOR

# MARS

SURFACE MISSIONS



Q&A  
with Tommy Lamkin

**I**n late June, Lt. Anca Selariu boarded a plane in Singapore and headed to Houston. She had just been selected by NASA to take part in a simulated mission to Mars. That mission, part of NASA's Crew Health and Performance Exploration Analog (CHAPEA) Mars surface simulation program, began on June 25, 2023, and will last 378 days. On a Sunday afternoon, and a few hours before she would depart for the Johnson Space Center, we had the opportunity for a video call. We talked about the mission, and everything in her life that got her to this point. In a hotel room, with a million other things on her mind, and about to face a year of isolation, she decided to tell her story. **This Q&A has been edited for brevity and clarity.**

**Tommy Lamkin:** *It's nice to meet you, Anca. Tell us a little bit about yourself.*

**Anca Selariu:** I'm a Lieutenant in the United States Navy, where I work as a microbiologist. I joined fairly late in my career; I've only been in the Navy for four years. My first duty station was Navy Environmental and Preventive Medicine Unit (NEPMU) 5, in San Diego, and the second was Naval Medical Research Unit-2, now known as NAMRU INDO PACIFIC.

I came [to the U.S.] from Romania. I've always had the desire to repay the kindness of the United States, though I never thought that I'd have the opportunity or the honor to

serve the United States as a naval officer, and this has meant a great deal to me. I've met the most incredible human beings on the planet and travel quite a bit, and I get to see the great importance of the efforts of Navy Medicine and the impact it has.

I started in science. I *love* science. It makes me happy to discover how many ways the human mind can look at the world, to find patterns and discover how everything works. I've always been curious about everything, and my first degree was actually in studying language and the science of text, called "philology". That was in Romania at the University of Transylvania. Shortly after that, I came to the United States, and I wanted to pursue biological sciences. I went to

the Montclair State University in New Jersey for a biochemistry degree. That was my second bachelor's degree, and immediately after that I went to get a PhD in biomedical sciences at Rutgers University. I've been living the American dream and I've had this incredible, incredible luck to be supported and mentored by people who believed in me, and really helped me throughout my journey.

**TL:** *I'm glad we did a video interview. It's evident that you've got this passion about you, and that's great; I don't have to do investigative journalism to see why NASA would want to work with you.*

*Tell me a little bit about the mission that you're going to do. How did you hear about it?*

**Continued on next page**

**AS:** I don't remember how I saw the announcement, but probably by browsing the NASA web page. I had just come back from a nearly one-year deployment at sea where I had the opportunity to support the COVID-19 pandemic [response] on the Mercy [naval hospital ship], and on an aircraft carrier. Being at sea, being in isolation, being away from social media, from friends and family, from direct communication and you know, being remote...I really felt like it prepared me for some of the constraints of Mars.

system will adapt to such a strange and exotic environment. We don't know how [our bodies] are going to respond to our nutritional needs during such a long journey, we don't know how we are going to respond to being isolated and away from our loved ones for a very long time, not just on a Navy ship in the middle of the ocean on the same planet, but really far away, where there are no resupplies at sea, and the resupplies we get, if there are [any], are going to be fewer and far between.

**TL:** *That's great to hear! You've already talked a bit about what you'll be doing. Could you expand a little more on what your official job will be?*

**AS:** My job will be the science lead. I will perform some of the experiments that are probably going to be incorporated in an actual Mars surface mission: looking at the geology of Mars, collecting samples, other activities and large experiments that I am guessing I will talk about more during the mission.

I have always been looking up, ever since I was a child, wondering about space. I had the same questions that every child has. Where does it go? How far does it go? Where does it end? Can we go and how? How soon can we get there? Mars has been on my mind as the next natural step.

We're passionate about getting data and the correct information to the scientists. You should see what's going on here at the Johnson Space Center; it's an enormously energetic and passionate group of people. This is what they live for. To come here and to be surrounded by such energy is incredibly rewarding. It feels like a privilege to be living in this energy with such extraordinary things happening all around you, and to be part of it. No words can describe.

**TL:** *I heard that there that they're going to have a simulated delay in communications. What does that look like?*

**AS:** We are going to experience the type of communication delay that is expected for an actual Mars mission, so whenever we get a signal, because Mars is a lot further than the moon, or the satellites, [there] is going to be a significant delay. When we had the old telephone system, [with] a slight delay between conversations, or when the call would drop and you'd get frustrated that it's not an instantaneous communication...this is way beyond that. It's many minutes between communications, so it's probably not a good idea to have arguments with anybody.

**TL:** *Obviously you're isolated the whole time. Are you nervous about that or any aspects of the mission?*

**AS:** I personally have experienced that already. I know what isolation feels like and it's not that that really makes me nervous.

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As a matter of fact, what makes me nervous is making absolutely certain that every bit of science we do is as accurate as possible, and [we] get all the data to the scientists as thoroughly and as cleanly as we possibly can, because this literally informs the first steps on Mars. Failure is not an option.

**TL:** *What will you miss the most?*

**AS:** I think I will miss the 5:00 PM sunlight...I just love that color of the light. I will probably miss the smells of earth, the smell of dirt, the smell of trees, the air, all the colors of this planet. That's pretty much what I can think of right now.

**TL:** *Are you allowed to take anything with you?*

**AS:** Yes, we can take some belongings, but they are limited in terms of type and quantity. I don't think that I will miss any worldly belongings that much. We can still communicate through a NASA channel, but it's like an email with the same delays [and] the same constraints that you would expect for a real Mars mission. I will be able to talk to everybody, I will just not be able to talk on the phone or see them.



We will probably wave at them through NASA TV if we ever get that, so we'll see.

**TL:** *It sounds like quite the challenge, but it's also very exciting. I could totally see the things that you would miss would be the things that you take for granted every day, not like TV or fast food. I don't even know if it applies, because you've already expressed so much, but what type of emotions are you going through right now?*

**AS:** I am...this is just a delight. I would love to see [a Mars mission] happen one day, broadcast on every channel in the entire world. I'm hopeful that what we're doing now is going to facilitate that. You asked something incredibly deep during your email to me. You

asked what I have to say to sailors who may be inspired by this. It's an incredible privilege to serve, because if you wake up every day with this desire to benefit the other humans that surround you, your country, your planet, life in this universe; if this is your main passion and desire, and if you persevere and are determined, every day is this incredible gift. And every person who is part of this journey comes with you in your heart. Your leaders are just incredible people, and they have the same desire for greatness. They have the same passion, and it's so empowering to see that. I want to thank everybody for everything that they've done, and for their extreme hardiness and tolerance for all my science rants, because there are many of them!

**TL:** *That's great. Absolutely amazing to meet you. I wish you the best of luck, and even if it might be a super long delay, please send me an email and hopefully we'll be in touch.*

**AS:** Thank you so much, Tommy. It was such an incredible pleasure to talk to you. ■



# A Summer of Changes



**Across  
the NMR&D Enterprise**

a recap by Sidney Hinds



Tommy Lamkin

*The Naval Medical Research and Development enterprise has seen a flurry of new leadership stepping up to helm its commands in 2023. From July to the beginning of August, four new commanding officers relieved departing leadership from Naval Medical Research Command (NMRC), Naval Medical Research Unit (NAMRU) SOUTH, Naval Health Research Center (NHRC) and NAMRU San Antonio.*



Monica Barrera

**O**n July 7, Capt. Abigail Marter relieved Capt. Franca Jones as the commanding officer of NAMRU SOUTH in an official ceremony with several distinguished guests, including Lisa Kenna, U.S. Ambassador to Peru, Peruvian Rear Adm. Jorge Enrique Andaluz Echevarría, Director of Peruvian Navy Health, and Capt. William Deniston, then-

commander of NMRC, in attendance.

“It’s a time-honored tradition, the passing of command from one naval officer to another,” said Deniston. “Capt. Jones did an incredible job leading NAMRU SOUTH and I’m sure Capt. Marter will as well.”

As NAMRU SOUTH commanding officer, Jones continued surveil-

lance activities and outbreak support for diseases such as avian influenza, H1N1 influenza and dengue fever, and oversaw assistance to Peruvian and other partner region militaries through educational sessions during Continuing Promise 2022 activities in Honduras and the Defense Institute for Medical Operations course held in Lima in 2023.

Before assuming command of NAMRU SOUTH, Marter served as the executive officer and the first deputy commander for NMRC in Silver Spring, Maryland from March 2021 to June 2023. While there, she streamlined civilian personnel processes, maintaining financial stability through expert personnel hiring actions. Realizing a vital need, Marter also increased presence at national and international conferences.

“NAMRU SOUTH is one of the most productive and well-respected research commands in the Naval Research and Development enterprise, with a broad range of collaborations in the AOR [area of responsibility]. I am both proud and humbled to be the new commanding officer of NAMRU SOUTH,” Marter stated.

*Continued on next page*



Monica Barrera



Later that month, on July 28, Capt. Eric Welsh relieved Capt. Dennis Faix as commanding officer of NHRC. Faix had previously assumed command of NHRC in May 2021 and led the research staff in launching 28 new studies, processing more than 400 authored works and generating the most human research protocols in the command's history.

"The mission of NHRC, the work that the staff does every day to better the life and performance of the warfighter, veterans and their families is truly remarkable. I have all the confidence that our staff will continue to execute at the highest professional levels and bring the

Navy Medicine R&D enterprise to better places. Respectfully, thank you all," remarked Faix.

Welsh had previously led Navy Environmental and Preventive Medicine Unit Five, also in San Diego. He expressed an excitement for tackling the responsibilities of his new role.

The following month, on Aug. 4, Capt. Gerald DeLong relinquished command of NAMRU San Antonio to Capt. Jennifer Buechel during a ceremony at the Fort Sam Houston Theatre.

DeLong had commanded NAMRU San Antonio since May of 2021, taking command during the COVID-19 pandemic with less than 50 per-

cent facilities occupancy for unit personnel. DeLong led the command back into full operations while securing the confidence of research sponsors.

"You will be leading the command at a very exciting time with many new potential research projects visible on the horizon or just over it," Delong remarked to Buechel at the ceremony, "The command will benefit greatly from your passion for research, relationships already established with research leaders and prior leadership experience with a medical research command."

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# **“Leading a research command such as this demands exceptional commitment and a deep understanding of our military's unique challenges”**



Buechel, who previously served as the executive officer of Naval Submarine Medical Research Laboratory in Groton, Conn., said it was a great honor to serve as the new commanding officer.

“As we embark on this journey together, I have the utmost confidence in the collective talent, dedication and resilience of our unit,” said Buechel. “I am inspired by the extraordinary work I have witnessed thus far, and I am honored and privileged to be entrusted with the responsibility of leading NAMRU San Antonio.”



Finally, following her departure from NAMRU SOUTH, Jones relieved Deniston as commander, NMRC, in an official ceremony on Aug. 11. Special guests to that change of command included Rear Adm. Guido F. Valdes, commander, Naval Medical Forces Pacific, who presided over the ceremony.

“Leading a research command such as this demands exceptional commitment and a deep understanding of our military's unique challenges,” Valdes remarked in an NMRC press release in August, “Medical research is critical to the success of the fleet and marine force, enhances the ability to meet operational

readiness requirements, and fosters new opportunities to succeed as both health care providers and warfighters.”

Deniston’s tenure as NMRC commander saw an increase in headquarters support for the enterprise commands, an expansion of the enterprise presence in media and at international conferences, and an alignment to the Naval warfighter through operationally oriented research and medical surveillance. Jones, who had previously served as executive officer for NMRC, thanked him for his work on behalf of the command.



*Continued on page 23*

# NAMRU INDO PACIFIC:

## *Collaborative Efforts in 2023*



*Lt. Cmdr. Nathaniel Christy*

***By Lt. Cmdr. Nathaniel Christy, Lt. Huy Nguyen, Lt. Anca Selariu, Lt. Thomas McGlynn, Capt. Andrew Letizia, Capt. Tammy Servies, with Sidney Hinds***

**L**ike all our commands in the Naval Medical Research & Development enterprise, Naval Medical Research Unit (NAMRU) INDO PACIFIC fires on all cylinders throughout the year.

2023 has been an especially busy

time for the command, as it undertook multiple collaborative ventures with partner nations and organizations throughout the Indo-Pacific region.

As one of the enterprise's OCONUS commands, NAMRU INDO PACIFIC relies on strong partner-

ships with governmental, academic and industry organizations local to Southeast Asia for research efforts and difficult-to-collect samples, sometimes in isolated and austere environments. Similarly, our international partners often turn to the command for training and expertise in a range of fields relevant to medical research.

*Continued on next page*

## Disease Surveillance

Earlier this year, three NAMRU INDO PACIFIC scientists, Capt. Andrew Letizia, NAMRU INDO PACIFIC infectious disease physician and science director, Lt. Cmdr. Nathaniel Christy and Lt. Huy Nguyen served as advisors for ZOMAC (also known as the *Longitudinal Surveillance for Zoonotic Malaria and other causes of Acute febrile illness in Malaysian Armed Forces (MAF) personnel deployed in Sabah, Malaysia: A Cohort study*).

This study aims to identify incidence and risk factors for infection and exposure to the parasite *Plasmodium knowlesi* within the MAF. *Plasmodium knowlesi* is a type of malaria parasite, transmitted to humans by mosquitoes. It is the most common type of human malaria in Malaysia and presents a readiness threat to U.S. allies in the region, causing severe symptoms in 6-9% of those who show signs of infection and lethal in roughly four out of every 1000 cases.

NAMRU INDO PACIFIC researchers advised multiple partners, including senior MAF medical leadership, physicians, lab technicians and medics, along with physicians from universities in Malaysia and Australia, on establishing study operating protocols, including participant recruitment, workflow, sample collection, sample storage and shipping. With help from MAF volunteers, the team conducted dry runs for the study to determine the best practices for collecting, storing and

transporting samples in and from the remote locations the study will take place. For example, to streamline sample processing during the study, paramedics whose main job is to draw blood, were trained on how to use centrifuges and transfer pipettes.

Collaborations like this, and those detailed below, can have the dual benefits of advancing medical research practices while strengthening the relationships between the U.S. and its partner nations.

## Ongoing SARS-CoV-2 Efforts

NAMRU INDO PACIFIC researchers have also remained hard at work examining the impacts of COVID-19 and the public health measures created in response to the pandemic. Letizia, along with Christy and NAMRU INDO PACIFIC microbiologist Lt. Anca Selariu, worked alongside the University of Malaysia's Tropical Infectious Diseases Research and Education Centre (TIDREC) in Kuala Lumpur, Malaysia, to examine sequencing protocols for enriching viral pathogens in order to study COVID-19-induced effects in Dengue virus clinical samples.

The NAMRU INDO PACIFIC team, along with experts the command brought in from the University of Nebraska Medical Center, was able to increase TIDREC's sequencing capabilities and introduce new protocols that will better identify the presence of pathogens that might have otherwise been missed by conventional methods. These new protocols may also reveal the origin and evolution of microorganisms involved in SARS-CoV-2 infection, information that will help evaluate containment measures used to curb the spread of illness.

***“I am confident  
that the skills  
and knowledge  
we gained will  
be beneficial to  
us in the future”***



*Continued on next page*

## Training

Lt. Thomas McGlynn, an entomologist temporarily billeted to NAMRU INDO PACIFIC from the Navy Entomology Center of Excellence, travelled to Johor Bahru and Melaka, Malaysia this year to train medical and non-commissioned MAF officers on malaria surveillance and diagnostic techniques.

An estimated 247 million people were infected with malaria in 2021, with 619,000 estimated to have died worldwide. Management of

Mosquito populations is the most effective way to lower the impact of malaria.

This training provided additional tools to MAF members to understand the mosquito population dynamics in their various camps. This, in turn, allows for more potent mosquito control. Beyond prevention through reduction of mosquito populations, McGlynn instructed MAF officers in malaria microscopy, which is the gold standard to diagnose malaria in blood samples, and is important to the identification of the disease and informing proper medical care.

***“NAMRU  
INDO PACIFIC  
is essential to  
the region’s  
biosurveillance  
efforts”***

Lessons learned from this training will in turn be taught to the those working with the 28 MAF officers who attended McGlynn’s course.

These many lines of efforts were recognized over the summer during a visit from Rear Adm. Guido Valdes, commander, Naval Medical Forces Pacific. Valdes visited the U.S. embassy in Singapore, and met with NAMRU INDO PACIFIC staff to learn about its history and current engagements.

“NAMRU INDO PACIFIC is essential to the region’s biosurveillance efforts,” said Valdes. “The infectious disease mitigation strategies developed here are critical to the readiness and survivability of the Navy and the Joint Force. I am grateful for the opportunity to meet with the research unit’s team of extraordinary medical professionals.”

NAMRU INDO PACIFIC, formerly known as NAMRU-2, and headquartered out of Singapore, conducts research in cooperation with host nations in Vietnam, Laos, Singapore, Malaysia and Thailand to improve global health, ensure military force health protection and address infectious diseases such as malaria, dengue fever virus and gastro-intestinal pathogens. ■



Lt. Anca Selariu



Lt. Huy Nguyen



Capt. Tammy Servies



# LIEUTENANT

## JESSY A. CALDERON CASILLAS

*Discusses Navy Career and Hispanic Heritage Month*

*By Sidney Hinds*

**F**or Lt. Jessy A. Calderon Casillas, joining the U.S. Navy was appealing for many reasons. The opportunity to travel the globe and experience different walks of life was one such advantage.

A native of Puerto Rico, Calderon takes the values and traditions she grew up with wherever she travels. Her work has taken her many places in the world, where she's been able to appreciate the cultures of others while sharing her own Hispanic heritage in turn.

"We use the seas as a road to connect countries and people all over the world," Calderon explained. "I really enjoy getting to see the ways of living in other places. It's a real privilege."

Calderon, an industrial hygiene officer with Naval Medical Research Command (NMRC)'s Safety Office, was the first in her family to join the U.S. military. She graduated from the Public Health School of Medical Science Campus, University of Puerto Rico in 2011, and moved to Florida in 2014.

Calderon worked as an industrial hygienist in central Florida before joining the Navy in 2019. She reported to Navy Medical Readiness and Training Command in Yokosuka, Japan, for her first assignment, where she worked as an industrial hygienist officer. In 2021, she traveled to NMRC in Silver Spring, Maryland, where she has undertaken multiple responsibilities and leadership roles like deputy director for administration and safety de-

partment head in addition to her industrial hygienist work.

"The Navy has many career opportunities worth considering" Calderon explained. "Service will impact your lifestyle and relationships, and in the long run it fulfills a sense of purpose and pride, and provides opportunities to grow, experience the world and connect with extraordinary individuals."

***"Being aware of  
our cultural  
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differences can  
only add to our well-  
being as humans,  
and have a positive  
impact on the  
mission"***

Calderon has served across the world during her time with the military, to Thailand, Nepal, the Philippines, the Republic of Georgia, Bulgaria and Kenya. Getting an insight into different places around the world has been one of her favorite parts of military service.

Hispanic heritage month is an important observation for Calderon, who finds significance in viewing both her work and life through the lens of cultural values she's inherited. She expressed the importance of observation months as times for people across the country to pause and celebrate not just Hispanic her-

itage, but the heritage of people from many different backgrounds.

"It's an act of protection and preservation," Calderon explained. "We all have something ingrained in us that comes from our culture, our values and our traditions. Being able to share that with other people who have that same culture is very rewarding, but so is sharing that with others."

"Being aware of our cultural similarities and differences can only add to our well-being as humans, and have a positive impact on the mission," she added. "Culture makes us who we are, and recognizing that culture is something that can bring us together, which adds flavor to the Navy."

Calderon is a self-professed foodie, and has enjoyed her assignments abroad and in the Washington Metro Area for the culinary opportunities they offer.

"Being a foodie in the D.C. area is very rewarding. There's so many places to go; festivals, events, and interesting places to eat. I approach food with the same mindset that I approach travel: see other cultures, taste different things and experience more of the world. That's my approach to life as well. I can't imagine any other way to live."

Throughout Hispanic Heritage month, NMRC aims to recognize the contributions of our sailors, scientists and civilian personnel with roots in countries and cultures with Spanish-speaking heritage. ■

**RESEARCH NEEDS?  
WRITING A PAPER?  
NEED HELP WITH SOURCES?**

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## *NHRC continued from page 5*

Together, CREW and OWL act as a comprehensive solution to monitor and manage fatigue-related risk. TS23 afforded the first opportunity to successfully test the CREW program wearables system together with OWL in a high operational tempo environment.

“The goal of this exercise was threefold for us,” said Dr Rachel Markwald, NHRC’s principal investigator for the CREW program. “First, to demonstrate that commercial wearable devices can be used to transfer readiness data automatically without needing to rely on

smart phones or tablets in the underway environment. Second, to showcase that these data can then be used to identify Sailors at high fatigue risk and alert leaders, and third, do all of this in a high operational tempo in near real-time.”

“Our first attempt at this was at the end, a great success, but not without its challenges,” said Lt. Matthew Peterson, a research physiologist who embarked aboard Green Bay. “We encountered the expected software and hardware challenges that come with testing a new technology for the first time, but it was the unexpected challenges, such as communication delays and space

complexities that occur when operating at-sea, that challenged us most. We will take what we learned and better adapt for the next evolution of this research effort.”

NHRC’s mission is to optimize the operational readiness and health of our armed forces and families by conducting research, development, testing and evaluation. NHRC supports military mission readiness with research and development that delivers high-value, high-impact solutions to the health and readiness challenges our military population faces on the battlefield, at-sea, on foreign shores and at home. ■

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## *Changes of Command continued from page 16*

“We have an incredibly important mission,” Jones said “to field medical solutions to the fleet and Marine Corps for expeditionary operations in all domains – undersea, on land, in the air and in space. As an enterprise, we can accomplish this mission better than any one command.”

“Capt. Deniston has established a great foundation for our future,” she added. “I ask all of you to join me in building on that foundation to guarantee the success of NMRC and the enterprise in supporting the Navy and Navy Medicine.”

These changes to leadership mark the first time that four commands, half of the eight under the Naval Medical Research and Development enterprise, will be led by female officers. Buechel, Marter and Jones join Capt. Virginia Blackman as leaders at the forefront of Navy Medicine.

The enterprise has also welcomed new executive officers to its com-



Tommy Lamkin

mands in the last few months. When Marter departed to assume command of NAMRU SOUTH, Capt. Michael Tiller joined the enterprise as NMRC deputy commander. Tiller had previously served as deputy director, Combat Casualty Care and Expeditionary Resuscitative Medicine, with Brook Army Medical Center. In June, Capt. Tatana Olson reported to Na-

val Submarine Medical Research Laboratory in Groton, Connecticut, following three years with the Research and Engineering Directorate at the Defense Health Agency, where she served as acting chief of staff, and then acting deputy director and branch chief for Science & Technology Portfolio Management. ■

# Scope News

*A closer look at Navy Medicine's R&D enterprise*



**SILVER SPRING, Md. (Oct. 5, 2023)** Lt. Cmdr. Chaselyn Watters, a microbiologist with Naval Medical Research Command's Biological Defense Research Directorate, considers a game state on his chessboard. Watters represented the United States at the 33rd NATO Chess Championship in Slovenia alongside other U.S. service members from Sept. 4 - 8. The U.S. won bronze in the team category this year, right behind Greece and Germany, and secured gold in the blitz category, a first for an American team.

"The NATO tournaments are really fun," Watters remarked. "There's seven rounds, and each round it's customary to present your opponent with something unique from your country. Chess is like a language, you can really speak it anywhere. I've made a lot of friends and had a lot of opportunities through chess."

Watters has been an avid chess player since the age of thirteen, and has been coached by two grandmasters, including Susan Polgar, the women's world chess champion from 1996-1999. He is

currently a titled player, holding the rank of USCF national master.

Watters emphasized the importance of putting in the hours regularly to reach the pinnacle of performance.

"Life is much like chess," said Watters. "Things can be going great, and then you lose something key in your life, or hit an obstacle, but you keep playing through. You've always got to have a plan, or be ready to make a plan if the current one fails. Take a bad position and improve it."  
— *Sidney Hinds*

# Scope News

*A closer look at Navy Medicine's R&D enterprise*



**LONDON (Sept. 14, 2023)** Personnel from Naval Health Research Center attend the 6th International Congress on Soldiers' Physical Performance. — *John Marciano*



**SAN ANTONIO (Sept. 26, 2023)** Dr. Stephen Tela, deputy director, Maritime Headquarters, Navy Bureau of Medicine and Surgery, speaks with a scientist during a visit to Naval Medical Research Unit San Antonio. — *Burrell Parmer*



**COMAYAGUA, Honduras, (Aug. 15, 2023)** Personnel from Naval Medical Research Unit SOUTH and Joint Task Force Bravo, Medical Element collaborate with regional Department of Health and Universidad Nacional Autónoma de Honduras to conduct leishmaniasis surveillance activities. — *Spc. Mariana Matia*



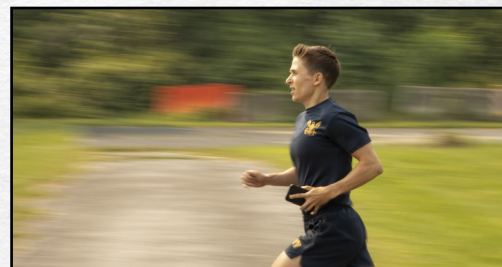
**DAYTON, Ohio (June 2, 2023)** Dr. Hank Williams (center) briefs research in Naval Medical Research Unit Dayton's spatial disorientation laboratory to participants of the U.S. Air Force's Advanced Aerospace Medicine for International Medical Officers course during a Command visit. — *Zack Wilson*

# Scope News

*A closer look at Navy Medicine's R&D enterprise*



**DAYTON, Ohio (July 23, 2023)** Lt. Xan Kaplan and Madison Larsen, of Naval Medical Research Unit Dayton, speak to attendees during the annual Dayton Air Show. —*Zach Wilson*



**SILVER SPRING, Md. (June 7, 2023)** Lt. Carolyn Judge of Naval Medical Research Command participates in the annual physical readiness test. —*Mike Wilson*



**GROTON, Conn. (Sept. 1, 2023)** Capt. Tatana Olson, executive officer, Naval Submarine Medical Research Laboratory is pinned to the rank of captain by her daughter. —*Emily Swedlund*



**SAN ANTONIO (Sept. 14, 2023)** Cpl. Gabriel Jordan of Naval Medical Research Unit San Antonio is promoted to sergeant. —*Burrell Parmer*



**DAYTON, Ohio (June 2, 2023)** Officers from Naval Medical Research Unit Dayton pose in different uniforms, current and historic, during a "Parade of Uniforms" event. —*Zack Wilson*

# Scope News

*A closer look at Navy Medicine's R&D enterprise*



**SAN ANTONIO (Aug. 31, 2023)**

Military and support personnel assigned to Naval Medical Research Unit San Antonio attended the sixth edition of “Mission Possible,” an information-sharing event held at the Tri-Service Research Laboratory. The purpose of “Mission Possible” is to better inform members of the command on the tactics, techniques, and procedures of the science directorates to include the resource acquisitions and administrative directorates.—*Burrell Parmer*

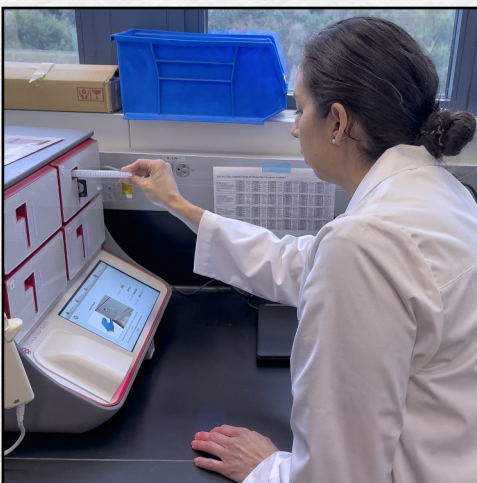


**SILVER SPRING, Md. (Aug. 10, 2023)**

Allison Linkous, a student from University of West Florida in Pensacola and intern with the Naval Research Enterprise Internship Program, explains her findings from a research poster.—*Sidney Hinds*



**LIMA, Peru (Sept. 15, 2023)** Gen. Laura Richardson, commander, U.S. Southern Command, greets Dr. Henju Marjuki, chief science officer of Naval Medical Research Unit SOUTH during an official visit.—*Monica Barrera*



**SILVER SPRING, Md. (Aug. 28, 2023)**

Lt. Cmdr. Sarah Jenkins, Diagnostics & Surveillance department head with Naval Medical Research Command's Navy Infectious Diseases Diagnostic Laboratory, prepares to test a sample for the presence of pathogens.—*Mike Wilson*

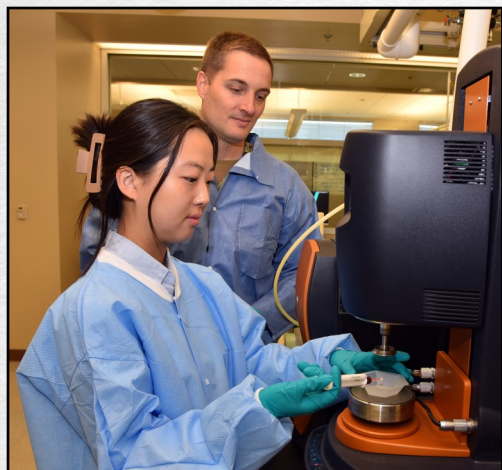


**GROTON, Conn. (July 27, 2023)**

Naval Submarine Medical Research Laboratory hosted five interns this summer through the Office of Naval Research: Four Science and Engineering Apprentice Program high school interns, and one Naval Research Enterprise Intern Program college intern.—*Emily Swedlund*

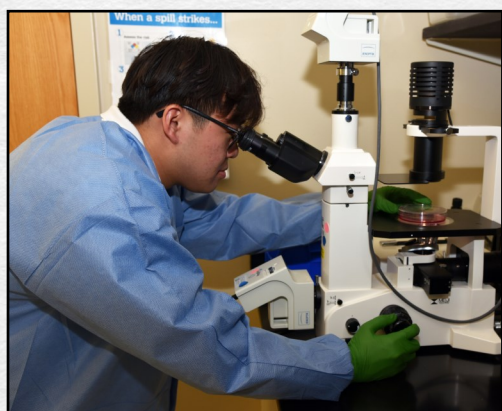
# Scope News

*A closer look at Navy Medicine's R&D enterprise*



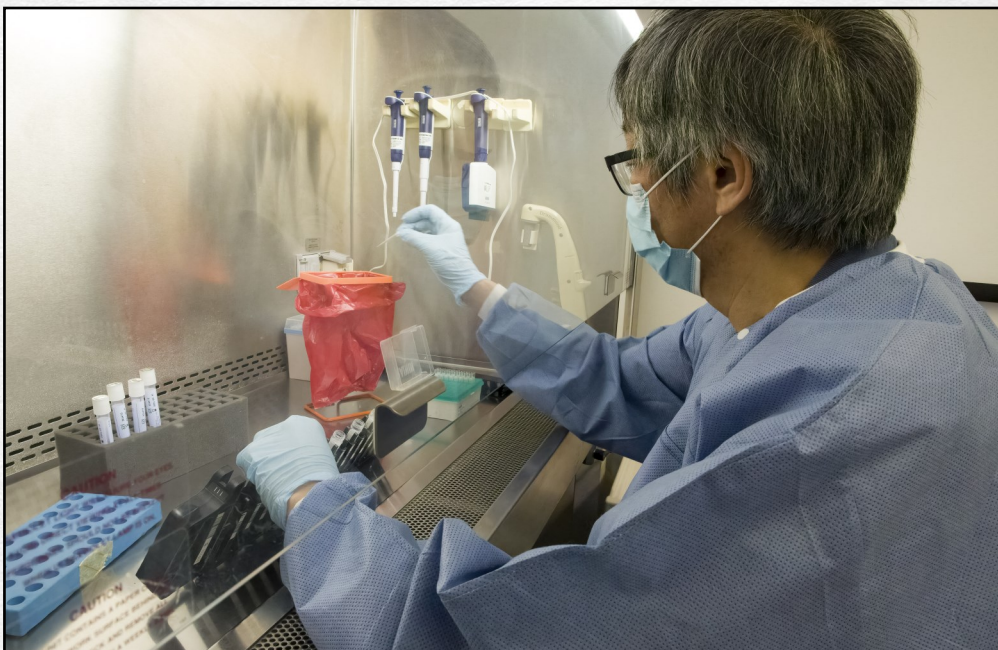
**SAN ANTONIO (July 13, 2023)**

University of Texas at Austin junior Sae-ha Lee, an intern assigned to Naval Medical Research Unit San Antonio, participated in the Office of Naval Research's Naval Research Enterprise Internship Program at the Battlefield Health and Trauma Research Institute. —*Burrell Parmer*

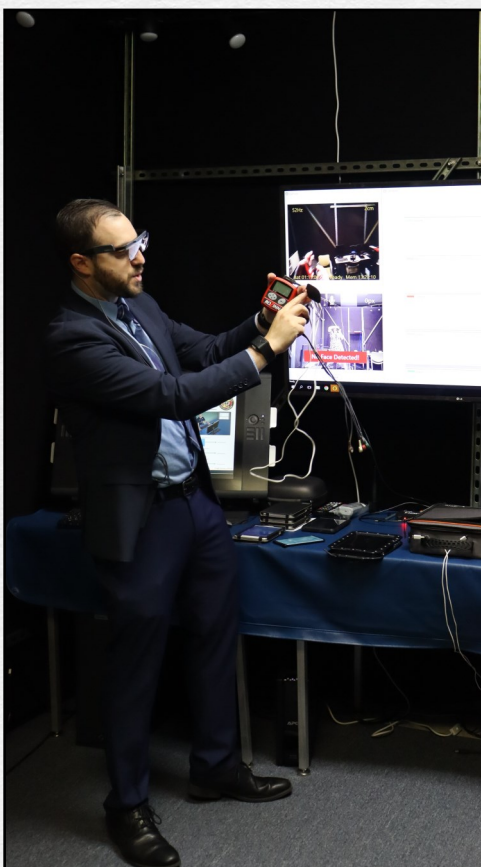


**SAN ANTONIO (July 11, 2023)**

Cornell University senior Tristan Tran, an intern assigned to Naval Medical Research Unit San Antonio, participated in the Office of Naval Research's Naval Research Enterprise Internship Program at the Battlefield Health and Trauma Research Institute. —*Burrell Parmer*



**SILVER SPRING, Md. (May 24, 2023)** Dr. Hua Wei Chen, a research scientist with Naval Medical Research Command, prepares a sample to test for the presence of the Zika RNA virus. — *Mike Wilson*



**LIMA, Peru (Sept. 5, 2023)** Staff from Naval Medical Research Unit SOUTH visit local Peruvian Air Force hospitals in efforts to strengthen scientific collaborations efforts among U.S. and Peruvian militaries. — *Alonzo Manuel*

**GROTON, Conn. (May 24, 2023)** Dr. Jeffrey Bolkhovksy from Naval Submarine Medical Research Laboratory presents wearable physiological monitoring technology. — *Emily Swedlund*




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# SCOPE

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